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Engineering and Design SOIL VAPOR EXTRACTION AND BIOVENTING

- 1. Purpose. This manual provides practical guidance for the design and operation of soil vapor extraction (SVE) and bioventing (BV) systems. It is intended for use by environmental, civil, geotechnical, chemical, mechanical, and electrical engineers; geologists, hydrogeologists, and soil scientists; chemists; project managers; and others involved in any phase of SVE and BV projects. The manual describes current best practice for SVE and BV site characterization, system design, and system start-up and operations. Both SVE and BV technologies are still developing, and updates to this manual will be issued as appropriate.
- **2. Applicability.** This manual applies to all HQUSACE elements, major subordinate commands (MSC), districts, laboratories, and field operating activities (FOA) having hazardous, toxic, or radioactive waste responsibilities.

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- 3. Distribution Statement. Approved for public release, distribution is unlimited.
- 4. References. References are provided in Appendix A.

FOR THE COMMANDER:

6 Appendices

App A - References

App B - Properties of Common Organic Pollutants

App C - Modeling

App D - Recommended Estimation
Methods for Air Permeability

App E - Analytical Solution for Two-Dimensional Flow to A Well

App F - Overview of Rebound Test
Procedures and Data Evaluation